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10/731,026	12/10/2003	Toshiaki Hanibuchi	032404-076	5172

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EXAMINER	
FLORES, LEON	

ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
11/01/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/731,026	HANIBUCHI, TOSHIAKI	
	Examiner	Art Unit	
	Leon Flores	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-11* is/are allowed.

6)☒ Claim(s) *12-16* is/are rejected.

7)☒ Claim(s) *17-20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/20/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims (12-20) have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims (12-20) are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In Claim 12, the applicant claims, "transmit a control signal... in accordance with the first clock", and "generates a second clock from the control signal". According to these two limitations, second clock is not independent of first clock. However, applicant further claims that, "the first clock and the second clock are generated independently of one another".

For the purpose of art considerations on the merits, claim 12 will construed as the first clock and second clock being generated dependent of one another.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims (12-20) are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 12, the applicant claims, "transmit a control signal... in accordance with the first clock", and "generates a second clock from the control signal". According to these two limitations, second clock is not independent of first clock. However, applicant further claims that, "the first clock and the second clock are generated independently of one another".

For the purpose of art considerations on the merits, claim 12 will construed as the first clock and second clock being generated dependent of one another.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. **Claims (12-14) are rejected under 35 U.S.C. 103(a) as being unpatentable over Terashima et al. (hereinafter Terashima) (US Publication 2003/0043926 A1), and in view of Barth et al. (hereinafter Barth) (US Patent 7,210,015 B2)**

Re claim 12, Terashima discloses an asynchronous data transmitting apparatus, comprising: a first transmission line having a first delay (See fig. 1: 130 & paragraph 65); a second transmission line having a second delay (See fig. 1: 102 & paragraph 65); a transmitter that includes a first transmitting unit that transmits a data signal through the first transmission line, in accordance with a first clock (See fig. 1: 110 & paragraph 65); and a second transmitting unit that transmits a control signal through the second transmission line, in accordance with the first clock (See fig. 5: 101); and a receiver that includes a clock generator that generates a second clock from the control signal transmitted through the second transmission line (See fig. 5: the output of element 103); and a data receiving unit that receives the data signal through the first transmission line, depending on the second clock; (See fig. 5: elements 22n receives data.) and the timing of reading received data is controlled based on information of the first clock. (See fig. 5: 102)

But the reference of Terashima fails to teach that wherein the transmitter is configured to transmit asynchronous data in a system in which the first clock and the second clock are generated independently of one another.

However, Barth does. (See fig. 5A: 510, 512, 546, & col. 5, lines 46-59) Barth discloses a system that supports at least three data transfer modes: synchronous mode, slow synchronous mode, and asynchronous mode.

Therefore, taking the combined teachings of Terashima and Barth as a whole. It would have been obvious to one of ordinary skills in the art to have incorporated these features into the system of Terashima, in the manner as claimed and as taught by Barth, for the benefit of consuming less power. (See col. 10, lines 44-45)

Re claim 13, the combination of Terashima and Barth further discloses that wherein the control signal has two binary levels which alternate in each transmission cycle. (In Terashima, see fig. 18: clock A)

Re claim 14, the combination of Terashima and Barth further discloses that wherein the control signal is the first clock. (In Terashima, see fig. 5: the output of element 101 is a clock signal that is being transmitted via transmission line 102.)

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. **Claims (15 &16) are rejected under 35 U.S.C. 103(a) as being unpatentable over Terashima et al (hereinafter Terashima) (US Publication 2003/0043926 A1) and Barth et al. (hereinafter Barth)(US Patent 7,210,015 B2), as applied to claim 12 above, and further in view of Sadami et al. (hereinafter Sadami)(JP406054016A).**

Re claim 15, the combination of Terashima and Barth fails to disclose that wherein the clock generator includes an inverter that inverts the control signal transmitted through the second transmission line and outputs a suppressing signal; and an AND circuit to which the suppressing signal and a third clock, wherein the AND circuit outputs the second clock.

However, Sadami does. (See fig. 2: element 3) Sadami discloses a skew correction circuit comprising of a detection unit, correction unit & signal generation unit. The signal generation unit consists of delay circuits (3 inverters), a Nand gate, a frequency simplification circuit, and an Or gate. The output of the signal generation unit is a clock (See fig. 9: F), which is inputted to the skew correction unit 4.

Therefore, taking the combined teachings of Terashima, Barth, and Sadami as a whole. It would have been obvious to one of ordinary skill in the art to have

incorporated these features into the system of Terashima, as modified by Barth, in the manner as claimed, and as taught by Sadami, for the benefit of detecting and correcting skews between parallel transmission lines. (See abstract)

Re claim 16, the combination of Terashima, Barth, and Sadami further discloses that wherein the clock generator includes an AND circuit to which the control signal transmitted through the second transmission line and a third clock, wherein the AND circuit outputs the second clock. (In Sadami, see fig. 2: element 3)

Allowable Subject Matter

10. Claims 1-11 are allowed.

3. Re claim 1, the further limitation of, *"an asynchronous data transmitting apparatus, comprising: a first transmission line having a first delay; a second transmission line having a second delay smaller than the first delay; a third transmission line having a second delay larger than the first delay; a transmitter that includes a first transmitting unit that transmits a data signal through the first transmission line, depending on a first clock; a second transmitting unit that transmits a control signal through the second transmission line, depending on the first clock; and a third transmitting unit that transmits the control signal through the third transmission line, depending on the first clock; and a receiver that includes a clock generator that generates a second clock from the control signals transmitted through the second and third transmission line, wherein a pulse of the second clock is provided in a period from*

a first pulse-edge of the control signal transmitted through the third transmission line to a second pulse-edge subsequent to the first pulse edge, the second pulse-edge being of the control signal transmitted through the second transmission line; and a data receiving unit that receives the data signal through the first transmission line, depending on the second clock". Claims 2-6 depend on claim 1.

4. Re claim 7, the further limitation of, *"an asynchronous data transmitting apparatus, comprising: a first transmission line having a first delay; a second transmission line having a second delay smaller than the first delay; a third transmission line having a second delay larger than the first delay; a transmitter that includes a first transmitting unit that transmits a data signal through the first transmission line, depending on a first clock; a second transmitting unit that transmits a control signal through the second transmission line, depending on the first clock; and a third transmitting unit that transmits the control signal through the third transmission line, depending on the first clock; and a receiver that includes a data receiving unit that receives the data signal through the first transmission line, depending on a second clock; and a processing unit that generates an enable signal from the control signals transmitted through the second and third transmission line, and determines whether to read the data signal received based on the enable signal, wherein a pulse of the second clock is provided in a period from a first pulse-edge of the control signal transmitted through the third transmission line to a second pulse-edge subsequent to the first pulse edge, the second pulse-edge being of the control signal transmitted through the second transmission line".* Claims 8-11 depend on claim 7.

5. Claims (17-20) are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Re claim 17, the further limitation of, *"The asynchronous data transmitting apparatus according to claim 12, wherein the second delay is smaller than the first delay; the clock generator generates the second clock from the control signal transmitted through the second transmission line and a delayed signal, wherein the delayed signal is delayed by a predetermined delay from a leading edge of the control signal, the predetermined delay is not less than a difference between the first delay and the second delay, and a pulse of the second clock is provided in a period from a leading edge of the delayed signal to a leading edge of the control signal transmitted through the second transmission line".* Claim 18 depends on claim 17.

7. Re claim 19, the further limitation of, *"the asynchronous data transmitting apparatus according to claim 12, wherein the second delay is larger than the first delay; the clock generator generates the second clock from the control signal transmitted through the second transmission line and a delayed signal, wherein the delayed signal is delayed by a predetermined delay from a leading edge of the control signal, the predetermined delay is not more than a difference between the first delay and the second delay, and a pulse of the second clock is provided in a period from a leading edge of the control signal transmitted through the second transmission line to a trailing edge of the delayed signal".* Claim 20 depends on claim 19.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon Flores whose telephone number is 571-270-1201. The examiner can normally be reached on Mon-Fri 7-5pm Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LF
October 26, 2007

DAVID C. PAYNE
SUPERVISORY PATENT EXAMINER